09/575898

Abstract of the Disclosure

A solder bar compatible with conventional flip chip technology fabrication methods for high power/high current applications includes first and second generally circular solder pads of diameter D formed upon a substrate and connected by a solder bar pad of width BW. The centers of the generally circular solder pads are spaced apart by distance BL (bar length). A mass of solder having volume VB is formed over the first and second generally circular solder pads and over the solder bar pad to form a dog-bone shaped solder bar. The solder bar reaches height H1 above the centers of the first and second generally circular solder pads, and reaching height H2 above the midpoint of the solder bar pad. The values for diameter D, bar length BL, bar width BW, and solder volume VB are selected in such manner that H1 and H2 are approximately equal. Conventional circular (as viewed from above) solder bumps can be formed upon the same substrate; in this case, heights H1 and H2 are made approximately equal to the height of the conventional solder bumps.